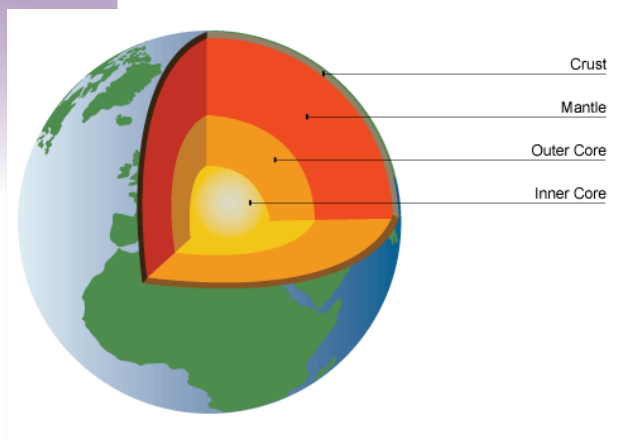


EVALUATE

WHAT'S INSIDE SPACE ROCKS?

EDIBLE METEORITES

30 MINUTES (CREATING)
30 MINUTES (ANALYSING)



Asteroids, like Earth, can have a crust, mantle and core too (image: BBC GCSE Bitesize)

SUMMARY

Rice crispy slice and rocky road have quite a lot in common with meteorites. They're made of different bits and pieces that we can pick out. In this activity we'll have some fun making and dissecting meteorites. It's also a chance for students to reflect on all that they have learnt, and continue to ask more questions about space and rocks.

Scientists study what's in meteorites because they tell us about the planet, asteroid or comet they are from. Much like on Earth, solid iron forms at the core of planetary bodies, olivine crystals are found at the core-mantle boundary and mixed up rocky patterns are found closer to the crust.

OUTCOMES

1. Students learn about different types of meteorites and make observations using their senses to discuss, describe and draw representations of meteorites
2. Students test ideas and sort information about meteorites and their shapes and sizes
3. Students create and analyse edible meteorites that resemble a particular type of meteorite

SAFETY

Remember to check for any student allergies or food intolerances when preparing for this activity.

EQUIPMENT - CREATING

- Recipes for rocky road, rice crispy slice, page 58
- Ingredients required for above recipes
- Baking equipment - spoons, microwave safe bowls, baking paper, trays, teatowels and mits
- Microwave
- Fact sheets and Types of meteorite table, pages 70 - 85

THE EXPERIMENT - CREATING

Plan:

After investigating types of meteorite and discussing the differences between rocky road and marshmallow rice bars, students plan how they will make a sample of each of four types of meteorite (chondrite, achondrite, iron meteorite, pallasite).

Predict:

Students help make the meteorites by predicting how much of the important inclusions to add to each type of meteorites.

Have adults make the mixtures in a large bowl by following the instructions on page 58.

Test:

To make individual meteorites, students collect a 'slice' of their meteorite type and mould it into a shape.

Using tongs, students dip their shape into melted chocolate and leave to cool.

Analyse:

After the meteorites have been left to set, students give their samples to other groups to dissect - see describing experiment

Communicate:

Have students design an advert for their meteorite treat explaining what it is made from, and what those things represent.

EQUIPMENT - DESCRIBING

- Pre-made edible meteorites of different varieties
- Clean work area or placemats
- Butter knives or dough cutting spatulas
- Camera/digital tablet for recording images



Rocky road pallasite meteorite

THE EXPERIMENT - DESCRIBING

Plan:

Students revise the different types of meteorites they have learnt about and decide what they will look for when dissecting the edible meteorites

Predict:

Students 'discover' their meteorite and before dissecting it, predict what kind it is. Normally scientists have to do this and it may be many months, if at all before they can look inside their meteorite

Test:

Students make a single careful incision in their meteorites to divide it in half. They create a labelled sketch of what they see. They could also take photos of the sample.

Analyse:

Students hypothesise the type of meteorite they have and explain why. They may need to make another cut - make sure to do it carefully!

Communicate:

Students share with others what they found out about their meteorite and discuss their hypothesis with the student who made it. They also tell them how delicious it was!

SUGGESTIONS FOR THE CLASSROOM

- Read about meteorites and types of meteorites and have a look at real samples. Describe the different pictures. Create a simple table to explain the differences between chondrites, achondrites, iron meteorites and pallasites.
- Use a defined cooking space that is clean and ensure students wash hands and maintain good hygiene while creating meteorites. Remind them that they won't be able to sample the meteorites if they have not been hygeinically made.
- After modelling the known types of meteorites, students will enjoy creating their own, and being able to explain its make-up to the class.
- As another finishing activity, check out Space Rocks! A giant Meteorite Board Game from the Lunar and Planetary Institute: http://www.lpi.usra.edu/education/space_days
- Introduce the difference between the words 'chondrite' and achondrite' by comparingthem with 'symmetry' and 'asymmetry'



Rocky road chondrite



Rice crispy achondrite